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(84) Title: **PARAMYCOBACTERIAL DIAGNOSTICS AND VACCINES**

(57) Abstract: The present invention relates to nucleic acid sequences encoding *Mycobacterium avium* subspecies *paratuberculosis* proteins, to parts of such nucleic acid sequences that encode an immunogenic fragment of such proteins, to DNA fragments, recombinant DNA molecules, live recombinant carriers and host cells comprising such nucleic acid sequences or such parts thereof. The invention also relates to *Mycobacterium avium* subspecies *paratuberculosis* proteins and immunogenic parts thereof encoded by such sequences. Furthermore, the present invention relates to vaccines comprising such nucleic acid sequences and parts thereof, DNA fragments, recombinant DNA molecules, live recombinant carriers and host cells comprising such nucleic acid sequences or such parts thereof, proteins or immunogenic parts thereof and antibodies against such proteins or immunogenic parts thereof. Also, the invention relates to the use of said proteins in vaccines and for the manufacture of vaccines. Moreover, the invention relates to the use of said nucleic acid sequences, proteins or antibodies for diagnostic or vaccination purposes. Also, the invention relates to methods for the preparation of such vaccines. Finally the invention relates to diagnostic kits comprising such nucleic acids, proteins or antibodies against such proteins.